

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of

)  
)  
) Amendment of Parts 2 and 90 of the  
) Commission's Rules to Allocate the  
) 5.850-5.925 GHz Band to the  
) Mobile Service for Dedicated Short  
) Range Communications of Intelligent  
) Transportation Services  
)

RM-9096;  
ET Docket No. 98-95

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

**COMMENTS OF ITS AMERICA**

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## SUMMARY

The Intelligent Transportation Society of America ("ITS America"), by its counsel and pursuant to Section 1.429 of the Commission's Rules, hereby submits its Comments in support of the Notice of Proposed Rule Making, FCC 98-119 (June 11, 1998) ("NPRM"), in the above-captioned proceeding.

ITS America believes that the need for the spectrum allocation to DSRC-based ITS services to attain the national priority established by Congress in ISTEA, and reaffirmed in its Transportation Equity Act for the 21<sup>st</sup> Century ("TEA-21"), is even greater today than when it submitted its Petition in May 1997. Since then, Congress has reaffirmed in TEA-21 the national priority of a timely deployment of ITS services and called for a robust deployment of those services over the next six years. As reflected by the record compiled on the ITS America Petition, U.S. industry has redoubled its efforts in developing DSRC-based ITS services and products, an effort that will be further spurred by this Commission's continued leadership. International efforts at standardization and deployment of DSRC products in the 5.8 GHz Band also have moved apace since May 1997.

ITS America commends the Commission for its leadership in adopting the NPRM and fully supports the finalization of the proposed ITS spectrum allocation and the initiation of further proceedings in this Docket to establish service and licensing rules to support that allocation. These actions will have salutary and compelling public benefits that can be measured, most importantly, in terms of lives saved, injuries avoided and safer travel throughout the nation. They will, moreover, spur both the continued development of DSRC-based products and the industry standardization activities necessary to achieve the national interoperability

required by TEA-21. These will, in turn, facilitate the development of robust and competitive DSRC markets in the U.S. and further U.S. leadership in the emerging global ITS markets.

In the *NPRM*, the FCC indicates its intent to follow a two stage process in this proceeding. The first stage will be the completion of the spectrum allocation to DSRC-based ITS services and the second stage will be the adoption of final technical, service and licensing rules to govern the allocation. ITS America supports this process. As shown herein, there are compelling reasons for the Commission to promptly complete the spectrum allocation to spur the development of industry standards, accelerate the deployment of DSRC products consistent with TEA-21, promote the development of robust and competitive markets and facilitate U.S. competitiveness in the emerging ITS global markets. This will be an iterative process and the development of appropriate technical, service and licensing rules will require careful evaluation of the record compiled on the *NPRM*, among other things.

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Amendment of Parts 2 and 90 of the	)	RM-9096;
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5.850-5.925 GHz Band to the	)	
Mobile Service for Dedicated Short	)	
Range Communications of Intelligent	)	
Transportation Services	)	

**COMMENTS OF ITS AMERICA**

The Intelligent Transportation Society of America ("ITS America"), by its counsel and pursuant to Section 1.429 of the Commission's Rules, hereby submits its Comments in support of the Notice of Proposed Rule Making, FCC 98-119 (June 11, 1998) ("NPRM"), in the above-captioned proceeding.<sup>1</sup> By its NPRM, the FCC has proposed to allocate the 75 MHz of spectrum between 5.850 and 5.925 MHz for use by Dedicated Short Range Communications ("DSRC") of Intelligent Transportation Systems ("ITS"). To this end, the FCC has proposed to adopt new Section 90.371 establishing the Dedicated Short Range Communications Service ("DSRCS") in Subpart M (the Intelligent Transportation Systems Radio Service, or "ITS-RS") of Part 90 of the Rules.

In its Petition For Rulemaking submitted on May 19, 1997 (the "ITS America Petition"), ITS America submitted the National ITS Program Plan that had been jointly developed by private and public sector interests in the U.S. The National Program Plan identified a set of thirty ITS user services to be deployed in a national ITS infrastructure

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<sup>1</sup> *Amendment of Parts 2 and 90 of the Commission's Rules to Allocate the 5.850-5.925 GHz Band to the Mobile Service for Dedicated Short Range Communications of Intelligent Transportation Services*, RM-9096; ET Docket No. 98-95, Notice of Proposed Rule Making, FCC 98-119 (June 11, 1998) ("NPRM"); 63 Fed. Reg. 35558 (June 30, 1998).

by 2010 in response to the mandate of Congress in the Intermodal Surface Transportation Efficiency Act of 1991 ("ISTEA").<sup>2</sup> As the Commission notes, many of the ITS communications requirements are and will be met by existing communications systems, including commercial and private wireless systems, mass media systems and land-line telecommunications systems.<sup>3</sup> The National ITS Architecture, in addition, defined a need for dedicated DSRC links to be used in the deployment of a set of critical ITS applications, including, among others, incident management and response systems, emergency vehicle signal preemption systems, driver advisory and other in-vehicle signing systems. These DSRC-based ITS services are listed on Appendix B to the NPRM. ITS America anticipates that this list will be dynamic in nature and will grow as new services evolve.

ITS America believes that the need for the spectrum allocation to DSRC-based ITS services to attain the national priority established by Congress in ISTEA, and reaffirmed in its Transportation Equity Act for the 21<sup>st</sup> Century ("TEA-21"),<sup>4</sup> is even greater today than when it submitted its Petition in May 1997. Since then, Congress has reaffirmed in TEA-21 the national priority of a timely deployment of ITS services and called for a robust deployment of those services over the next six years. As reflected by the record compiled on the ITS America Petition, U.S. industry has redoubled its efforts in developing DSRC-based ITS services and products, an effort that will be further spurred by this Commission's continued leadership. International efforts at

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<sup>2</sup> Pub. L. No. 102-240, 105 Stat. 1916 (1991) ("ISTEA").

<sup>3</sup> NPRM at ¶ 2.

<sup>4</sup> Transportation Equity Act for the 21<sup>st</sup> Century, Pub. L. No. 105-178, 112 Stat. 107 (1998) ("TEA-21"). See generally Appendix A (provides summary of TEA-21).

standardization and deployment of DSRC products in the 5.8 GHz Band also have moved apace since May 1997.<sup>5</sup>

ITS America commends the Commission for its leadership in adopting the NPRM and fully supports the finalization of the proposed ITS spectrum allocation and the initiation of further proceedings in this Docket to establish service and licensing rules to support that allocation. These actions will have salutary and compelling public benefits that can be measured, most importantly, in terms of lives saved, injuries avoided and safer travel throughout the nation. They will, moreover, spur both the continued development of DSRC-based products and the industry standardization activities necessary to achieve the national interoperability required by TEA-21. These will, in turn, facilitate the development of robust and competitive DSRC markets in the U.S. and further U.S. leadership in the emerging global ITS markets.

**I. TEA-21 REAFFIRMS CONGRESS'S COMMITMENT TO THE DEVELOPMENT AND RAPID DEPLOYMENT OF INTELLIGENT TRANSPORTATION SYSTEMS.**

In ISTEA, Congress established as a national priority the development of ITS technologies and the deployment of a national ITS infrastructure.<sup>6</sup> ISTEA codified as national policy the development of:

a National Intermodal Transportation System that is economically efficient and environmentally sound, provides the foundation for the Nation to compete in the global economy, and will move people and goods in an energy efficient manner . . . [that] shall be adapted to "intelligent vehicles" . . . and other new technologies wherever feasible and economical.<sup>7</sup>

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<sup>5</sup> See generally Appendices B, C, D, and E.

<sup>6</sup> See generally ISTEA, *supra*.

<sup>7</sup> ISTEA at § 2.

ISTEA's goals included: the widespread implementation of ITS to enhance the capacity, efficiency, and safety of the nation's highway; the enhancement, through more efficient use of the nation's highways, of efforts to attain air quality goals; the enhancement of safe and efficient operation of the nation's highways; the development and promotion of an ITS industry in the United States; the reduction of societal, economic, and environmental costs associated with traffic congestion; and the enhancement of United States competitiveness and productivity by improving the free flow of people and commerce and by establishing a significant United States presence in this emerging field of technology.<sup>8</sup> ISTEA, accordingly, allocated significant public resources to spur the research and development of ITS products and technologies, to provide for operational tests and to encourage private sector initiatives and investment in the deployment of ITS technologies.

From the enactment of ISTEA in 1991 through 1997 significant progress was made towards achieving the ISTEA goals. Among the milestones during that time were the founding of ITS America in 1991, the development through cooperation of public and private sector interests of a national ITS Strategic Plan in 1992, the development of both a National ITS Program Plan and a National ITS Architecture from 1993 through 1995, the selection of four "model deployment initiative" areas to serve as a test bed for ITS infrastructure deployment, the operational test of an Automated Highway System ("AHS") in 1997, and the submission of the ITS America Petition for allocation of spectrum to meet needs identified by the National Program Plans and Architecture in 1997.

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<sup>8</sup> *ISTEA* at § 6052.



Private sector initiatives during that time included, among others, the successful rollout of numerous electronic toll systems, the introduction of vehicle navigation systems and the use of many delivery systems, including radio, over-the-air broadcast, cable television and landline N11, 800 and other numbers to distribute traffic information to the public. In short, both the public and private sectors have answered the challenge set by Congress in ISTEA since its enactment seven years ago.

The Transportation Equity Act for the 21<sup>st</sup> Century adopted by Congress and signed into law in June reauthorizes the National ITS program and plans for the next step in ITS development and deployment over the next six years.<sup>9</sup> In enacting ITS provisions of TEA-21, Congress found that:

(1) investments authorized by the Intermodal Surface Transportation Efficiency Act of 1991 (105 Stat. 1914 et seq.) have demonstrated that intelligent transportation systems can mitigate surface transportation problems in a cost-effective manner; and [that]

(2) continued investment in architecture and standards development, research, and systems integration is needed to accelerate the rate at which intelligent transportation systems are incorporated into the national surface transportation network, thereby improving transportation safety and efficiency and reducing costs and negative impacts on communities and the environment.<sup>10</sup>

TEA-21, most importantly, emphasizes the early deployment of ITS technologies on a national and interoperable basis during this time frame. To this end, TEA-21 requires that the Secretary of DoT specify to Congress by June 1, 1999 a list of critical standards for the deployment of an ITS infrastructure and take such actions as necessary to promote the development of those standards by January 1, 2001.<sup>11</sup> TEA-21 further

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<sup>9</sup> See TEA-21 at §§ 5201-5213.

<sup>10</sup> TEA-21 at § 5202.

<sup>11</sup> TEA-21 at § 5206. Under TEA-21, the Secretary of DoT is required, not later than June 1, 1999, to "submit a report to the Committee on Environment and Public Works of the Senate and the Committee

requires the DoT to conduct a comprehensive program to accelerate the integration and interoperability of intelligent transportation systems in metropolitan and rural areas.<sup>12</sup>

TEA-21 also establishes a deployment program to promote intelligent transportation systems that improve the safety and productivity of commercial vehicles and drivers and that reduce administrative costs.<sup>13</sup> The program's purpose is to advance the technological capability and deployment of intelligent transportation systems applications to commercial vehicle operations, including commercial vehicles information systems and networks (CVISN).<sup>14</sup>

Of TEA-21's funding total, \$1.28 billion is provided for fiscal years 1998-2003 to specifically fund the ITS program.<sup>15</sup> TEA-21 contains a comprehensive ITS research, development, and operational test and demonstration program for intelligent vehicles and intelligent infrastructure systems, and provides federal funding priority in five areas: (1) traffic management, toll collection, traveler information or traffic control systems; (2) crash-avoidance and integration of in-vehicle crash protection technologies; (3) human

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on Transportation and Infrastructure and the Committee on Science of the House of Representatives identifying which standards are critical to ensuring national interoperability or critical to the development of other standards and specifying the status of the development of each standard identified." *Id.* at § 5206(b) The Secretary is authorized to establish provisional standards if such action is necessary to ensure progress in achieving the purposes identified in this section for establishing a national architecture and standards and the Secretary is required to adopt a provisional standard if a standard identified as critical is not set by January 1, 2001. *Id.* at § 5206(c).

<sup>12</sup> TEA-21 at § 5208.

<sup>13</sup> TEA-21 at § 5209.

<sup>14</sup> *Id.*

<sup>15</sup> Appendix A (sets out funding allocation for ITS program)

factors research; (4) integration of intelligent infrastructure, vehicle and control technologies; and (5) impact of ITS on environmental, weather, and natural conditions.<sup>16</sup>

Most importantly, however, TEA-21 recognizes that the integration of advanced information and communications capabilities into the nation's transportation infrastructure is no longer a future goal, but rather a present day reality and need. TEA-21 thus for the first time authorizes the use of federal transportation funds generally for the deployment of ITS in the infrastructure. This "mainstreaming" of ITS will enable State and local transportation authorities to invest the funds needed to deploy many ITS services in the transportation infrastructure over the next six years.<sup>17</sup>

Consistent with the intent of promoting the early deployment of ITS services, Congress has directed the Commission to complete a rulemaking considering the allocation of spectrum for ITS by January 1, 2000.<sup>18</sup> Because of the many public benefits (ITS America Petition at 1-30) that will be realized from the deployment of DSRC-based ITS services, ITS America urges the Commission to act expeditiously in finalizing the proposed spectrum allocation and instituting further proceedings to define licensing and service rules before January 1, 2000. To this end, ITS America urges that government and industry must work closely and efficiently in order to seize on the opportunity for U.S. leadership in the ITS marketplace. ITS standards have already been adopted by

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<sup>16</sup> TEA-21 at § 5207.

<sup>17</sup> For example, Section 5102 of TEA-21, entitled "Surface Transportation Research," reauthorizes a general transportation research program that includes a technological innovation element. Among several priority areas, this research program, to be undertaken in collaboration with a broad spectrum of non-federal entities, shall include measuring the performance of US surface transportation systems and telecommuting and the use of information technology generally. In addition, Section 5117 of TEA-21, entitled "Transportation Innovation and Demonstration Program," under subsection (b)(3), requires the Secretary of Transportation to carry out a program to deploy ITS infrastructure technologies to measure transportation system activities to aid in planning and analysis of transportation systems.

<sup>18</sup> TEA-21 at § 5206(f).

European countries and Japan in a race towards deployment of ITS. Expeditious adoption of rules for the allocation of spectrum for use by DSRC is particularly critical in order for the Secretary of Transportation to fulfill its statutory obligations under TEA-21. TEA-21 requires the Secretary of Transportation to develop, implement, and maintain a national architecture to guide nationwide deployment of intelligent transportation systems and to set standards and protocols to promote the widespread use of these technologies and to ensure interoperability. This provision requires all Federal agencies and departments to use technical standards that are developed or adopted by voluntary consensus standards bodies, unless to do so would be inconsistent with applicable law or otherwise impractical. Under this provision, the Secretary is required, not later than June 1, 1999, to "submit a report to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure and the Committee on Science of the House of Representatives identifying which standards are critical to ensuring national interoperability or critical to the development of other standards and specifying the status of the development of each standard identified." The Secretary is authorized to establish provisional standards if such action is necessary to ensure progress in achieving the purposes identified in this section for establishing a national architecture and standards and the Secretary is required to adopt a provisional standard if a standard identified as critical is not set by January 1, 2001. ITS America believes that DSRC will be deemed by the Secretary as one of the standards that is critical to ensuring national interoperability and the development of other standards. However, any meaningful standards cannot be developed until the Commission has satisfied its statutory obligation to complete its rulemaking to allocate spectrum for ITS services in a timely manner.

Accordingly, ITS America urges the Commission to ensure completion of this rulemaking proceeding ahead of the statutory deadline of January 1, 2000. With these FCC and DoT actions, ITS America believes that licensing in the band can commence by the second half of year 2000, well within the deployment schedule established by TEA-21. ITS America thus respectfully asks the Commission to utilize fully its resources in order to complete this proceeding in a timely manner.

## **II. INDUSTRY INITIATIVES SUPPORT THE NPRM**

Since submission of the ITS America Petition in May 1997, private sector initiatives in the development of 5.8 GHz band technologies for deployment in the U.S. have accelerated. Many of these parties submitted Comments and Reply Comments on the ITS America Petition. The record on the Petition demonstrates, for example, that both broadband and narrowband DSRC products are available or under development for use in the U.S., that both passive and active tag systems are available or under development, and that both existing vendors of LMS systems in the 902-928 MHz band and new entrants intend to participate in the U.S. DSRC markets. The record on the Petition also establishes the demand for DSRC products for public and private applications.

ITS America believes that the U.S. DSRC markets will develop in a robust and competitive manner and will provide a diverse set of products and applications to meet existing and future demand. The applications for DSRC products are fully discussed in the Petition and summarized in Appendix B to the NPRM. ITS America notes that the allocation of adequate and suitable spectrum -- as proposed by the NPRM -- to support the development of a robust, multi-tiered marketplace is critical to reaching the objectives

of ISTEA and TEA-21. By providing the capacity and flexibility to implement a wide array of DSRC products through the proposed spectrum allocation, the FCC will spur the continued development of, and investment in, those products by both public and private sector interests. And, by ensuring that the U.S. DSRC markets are robust and competitive and the focal point for continued innovation and deployment of new applications, the FCC will facilitate U.S. competitiveness in the global ITS marketplace.

### **III. INTERNATIONAL DSRC OPERATIONS AND STANDARDS CONTINUE TO PROGRESS AND SUPPORT A TIMELY U.S. SPECTRUM ALLOCATION.**

As discussed in the NPRM, both European and Asian regulatory authorities have authorized the use of DSRC-based systems on frequencies proximate to that requested for U.S. operations.<sup>19</sup> European DSRC operations currently are limited to electronic toll systems and operate between 5795 and 5805 MHz and employ passive tags (“transponders”). Additional European DSRC operations may be authorized between 5805 and 5815 MHz. DSRC operations, including electronic toll, in-vehicle signing and other applications that employ active tags (“transceivers”), have been authorized in Japan and other Asian nations between 5.795-5.815 GHz (downlink) and 5.830-5.850 GHz (uplink), with an additional 40 MHz potentially available for future DSRC operations.

The European and Asian approaches to DSRC in the 5.8 GHz band are currently divergent. However, as described below, there is significant global standardization activity at 5.8 GHz. ITS America believes that the expeditious adoption of a Report and Order finalizing the U.S. DSRC allocation between 5.850 and 5.925 GHz will enable U.S. leadership in the global standardization process.

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<sup>19</sup> NPRM at ¶ 9.

The Comite Europeene de Normalisation ("CEN"), the governing body for European telecommunications standards, and Japan have already begun developing DSRC standards for 5.8 GHz for consideration by the International Standards Organization ("ISO") and the International Telecommunications Union ("ITU").

The three subject standards that are relevant to the framework of DSRC -- the physical layer, the data link layer, and the application layer -- are discussed below.

**A. DSRC Physical Layer**

Standards for DSRC physical layer for 5.8 GHz have been developed by CEN and Japan.<sup>20</sup> This standard defines the Open Systems Interconnection (OSI) layer 1, physical layer, for DSRC equipment. Discussions among industry parties have begun in an effort toward development of U.S. standards and initial discussions have been commenced with potential standards development organizations.

CEN has established a common framework for physical layer at 5.8 GHz for DSRC for road transport and traffic telematics (RTTT) applications, which includes, among other applications, automatic fee collection, automatic vehicle and equipment identification, and traffic and traveler information.<sup>21</sup> The physical layer, at 5.8 GHz, communication requirements for the information from the road-side units (RSU) and on-board units (OBU) are accounted for as downlink parameters, while the requirements associated with the information from the OBU to the RSU are accounted for as uplink parameters. The European standard provides for on-board units based on transponder technologies. Furthermore, the European standard allows for mixed time, frequency and

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<sup>20</sup> See Appendices B and C.

<sup>21</sup> See Appendix B.

space division multiple access approaches. The standard is conceived for the 10 MHz part, *i.e.*, 5.795 – 5.805 GHz, of the ISM band at 5.8 GHz. CEN has indicated that an additional sub-band (5.805 – 5.815 GHz) may be allocated on a national basis for RTTT.

An international pre-standard also has been approved by the MPT of Japan and is attached hereto as Appendix C. The Japanese standard has been submitted to the ITU, Working Party 8A on Land Mobile Communications Services for adoption as a draft recommendation.

The international pre-standard comprises performance requirements Open Systems Interconnection (OSI) Layer 1 at 5.8 GHz for DSRC. This international pre-standard does not include associated measurement procedures for verification of the requirements. This international pre-standard is based on transceiver technologies. In the physical layer at 5.8 GHz, communication requirements for the information from the RSU to the OBU are defined as downlink parameters while the requirements associated with the information from the OBU to the RSU are defined as uplink parameters.

#### **B. DSRC Data Link Layer**

The CEN standards for the DSRC data link layer has been previously submitted for consideration by ISO.<sup>22</sup> This standard applies to DSRC between Fixed Equipment at the roadside and Mobile Equipment in vehicles. This standard, however, does not apply either to vehicle to vehicle communication, nor to communication between different instances of Fixed Equipment. This standard adheres to the general DSRC architecture in

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<sup>22</sup> The CEN defines "Data Link Layer" as: "The conceptual layer of control or processing logic existing in the hierarchical structure of a station that is responsible for maintaining control of the data link. The data link layer functions provide an interface between the station higher layer logic and the data link. These functions include address / control field interoperation, channel access and command PDU / response PDU generation, transmission, and interpretation." Further, the term "Data Link" is defined as: "An assembly of two or more terminal installations and the interconnecting communications channel operating



which the Fixed Equipment controls the medium, allocating its use to Mobile Equipment within range of the Fixed Equipment. It supports simplex and half duplex transmission modes and caters for the use of semi-passive (transponder) as well as semi-active (transceiver) Mobile Equipment. This standard supports a variety of Fixed Equipment configurations. It supports configurations where one Fixed Equipment communicates with one Mobile unit, as well as configurations where one Fixed Equipment can communicate with several Mobile Equipment units. It does neither define any specific configuration nor layout of the communication zone. Further, it does not define to what extent instances of Fixed Equipment, operating in the vicinity of each other, need to be synchronized with each other. This standard defines parameters to be used in negotiation procedures taking place between Fixed Equipment and Mobile Equipment.

### **C. DSRC Application Layer**

The application layer provides services that enable application data transfer and remote application related operations. Standards defined for the DSRC application layer are frequency neutral. It defines the transfer syntax over the air interface and communication procedures for application multiplexing, fragmentation and concatenation. It also supports DSRC management including communication profile handling, through the defined communication negotiation and initialization procedure. CEN standards for DSRC application layer have been submitted to the ISO, but they have not been balloted.<sup>23</sup> The Institute of Electrical and Electronics Engineer, Inc. ("IEEE") has developed a draft applications layer standard for DSRC applications for ITS. The

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according to a particular method that permits information to be exchanged. In this standard the term terminal installation does not include the data source and the data sink." See Appendix D at § 3.1.

<sup>23</sup> Appendix E.

IEEE draft standard has not been submitted for international consideration, although such submission is under active discussion.

#### **IV. THE FCC SHOULD PROCEED WITH ITS TWO STAGE PROCESS.**

In the NPRM, the FCC indicates its intent to follow a two stage process in this proceeding. The first stage will be the completion of the spectrum allocation to DSRC-based ITS services and the second stage will be the adoption of final technical, service and licensing rules to govern the allocation. ITS America supports this process. As shown herein, there are compelling reasons for the Commission to promptly complete the spectrum allocation to spur the development of industry standards, accelerate the deployment of DSRC products consistent with TFA-21, promote the development of robust and competitive markets and facilitate U.S. competitiveness in the emerging ITS global markets. This will be an iterative process and the development of appropriate technical, service and licensing rules will require careful evaluation of the record compiled on the NPRM, among other things.

Pending completion of the record on the NPRM, however, ITS America notes its expectation that the channelization and licensing plans should be technology-neutral and enable the markets to select the best technology to serve the needs of the ITS community. Of particular importance in deriving these Rules will be the protection of "core" public safety related DSRC functions, such as incident management, emergency vehicle signal preemption, en-route driver's information and other services. Thus, while ITS America can envision certain more commercial DSRC services as being provided on an unlicensed Part 15-type basis, by the same token, it is clear that these core services must receive the protection afforded by co-primary licensing. This will provide the assurance required to

support the expected expenditures of both public and private sector funds on ITS infrastructure. Similarly, ITS America believes that the proposed power limitations of 30 watts EIRP should accommodate most, but perhaps not all, DSRC functions. In addition, ITS America recognizes, as does the NPRM (at ¶ 46), that some DSRC applications, for example in-vehicle signing, may have mixed public and private sector uses. ITS America encourages that the FCC view any private or commercial uses on DSRC frequencies as ancillary to the primary public safety uses of this spectrum and, indeed, as contributing to the investment necessary to deploy ITS on a nationwide interoperable and ubiquitous scale – as contemplated by TEA-21.

Finally, ITS America continues to be confident that DSRC-based ITS services may share the 5.85-5.925 GHz band with existing incumbents. Much work has been done to test co-channel band uses, to assess the potential for interfering band uses and to develop spectrum sharing protocols, where appropriate. This work will continue. In addition, ITS America intends to continue its discussions with Resound looking to ensuring a workable band environment with Resound's expected Part 15 unlicensed device (*see NPRM* at ¶ 18).

**V. CONCLUSION**

For these reasons, and as further detailed in its Petition, ITS America urges that the Commission expeditiously finalize the proposed spectrum allocation.

Respectfully submitted,  
ITS America

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September 14, 1998

APPENDIX A:  
SUMMARY OF TEA-21 (The Transportation  
Equity Act for the 21<sup>st</sup> Century)

## INTRODUCTION

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On June 9, 1998, President Clinton signed into law the Transportation Equity Act for the 21st Century (TEA 21), thereby reauthorizing the federal surface transportation program until the year 2003. Current calculations put the new law's funding totals at \$217.5 billion over six years (fiscal years 1998 to 2003). By comparison, TEA 21's predecessor, the Intermodal Surface Transportation Efficiency Act (ISTEA) authorized some \$155 billion from 1992 to 1997. TEA 21 achieves a 90.5% return to each state on receipts into the Highway Trust Fund. Average annual spending will reach just under \$26 billion across all programs.

Of the \$217.5 billion total, some \$198 billion is "guaranteed" for highway and transit spending. That is, receipts from the federal gas tax into the Highway Trust Fund are guaranteed to be spent only on transportation. No longer will the amounts collected in the trust fund be available to offset other parts of the federal budget. Within the guaranteed spending category, highways will receive some \$157 billion, transit roughly \$36 billion, another \$4.4 billion to highway programs not subject to annual obligation ceilings, and over \$2 billion for highway safety programs. Additional authorizations for the highway and transit programs reach the total of \$217.5 billion but are subject to the annual appropriations process. A program-by-program summary of TEA 21, along with funding charts, compiled by the US Department of Transportation can be found behind Tab 8.

Note: This summary incorporates the TEA 21 technical corrections bill, TEA-21 Restoration Act (Title IX of H.R. 2676) signed into law on July 22, 1998.

## I. INTELLIGENT TRANSPORTATION SYSTEMS

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### ***Funding (Section 5001)***

TEA 21 reauthorizes the federal ITS program -- at Sections 5201 to 5213 -- administered by US DOT's Federal Highway Administration. The bill provides overall funding for the ITS program of \$1.28 billion from 1998 to 2003. As proposed by FHWA and ITS America, TEA 21 allocates spending across two broad categories: (1) ITS standards, research, and operational tests funded at \$95 million to \$110 million annually; and (2) ITS deployment funded at \$101 million to \$122 million per year. Copies of the completed ITS subtitle (Sections 5201 to 5213), corresponding House/Senate Conference language and ITS funding charts immediately follow this summary.

In addition, the deployment funding is divided into two parts: money for metropolitan/rural deployment and money for CVO deployment. For metropolitan/rural: \$74 million, \$75 million, \$80 million, \$83 million, \$85 million, and \$85 million from 1998 to 2003, respectively. For CVO: \$25.5 million, \$27.2 million, \$30.2 million, \$32.2 million, \$33.5 million, and \$35.5 million from 1998 to 2003, respectively. Up to 10% of the deployment incentive funding may be moved between metropolitan/rural and CVO at the Secretary's discretion.

(By comparison, the ITS program received \$113 million annually under ISTEA in contract authority. Moreover, in the annual appropriations process, additional funds were made available for ITS out of FHWA's account for general operating expenses. TEA 21 removes this second source of funding for ITS.)

ITS program funding under TEA 21 (figures in millions of dollars):

Program Category	FY98	FY99	FY00	FY01	FY02	FY03	Total
I. ITS Standards, Ops. Tests, Research	\$95.0	95.0	98.2	100.0	105.0	110.0	603.2
II. ITS Deployment*	101.0	105.0	113.0	118.0	120.0	122.0	679.0
A. ITS Integration (Metro/Rural)	74.0	75.0	80.0	83.0	85.0	85.0	482.0
B. CVO Deployment	25.5	27.2	30.2	32.2	33.5	35.5	184.1
<b>Total</b>	<b>196.0</b>	<b>200.0</b>	<b>211.2</b>	<b>218.0</b>	<b>225.0</b>	<b>232.0</b>	<b>1,282.2</b>

*\*Figures for ITS Integration and CVO Deployment do not add up to totals for ITS Deployment funding due to earmarks not listed on this chart. See below for description and amounts of earmarks.*

### **Earmarks**

Within the ITS subtitle, several earmarks for specific projects are listed. Under the metropolitan/rural deployment subcategory, there are two earmarks: (1) the Gary-Chicago-Milwaukee ITS Corridor funded at \$2 million per year; and (2) the I-95 Corridor funded at \$5 million per year. Out of the general deployment funding, there are two additional earmarks: (1) Hazardous Materials Monitoring Systems and ITS at \$1.5 million per year; and (2) Texas Transportation Institute's Translink Research Program at \$1.3 million per year.

Last, there is one earmark funded from the general research money to the Urban Consortium for ITS outreach and technology transfer activities, at \$500,000 per year. (A comprehensive discussion of all ITS-related earmarks follows below.)

### ***Findings (Section 5202)***

Congress finds that under ISTEA investment in ITS has shown that ITS can mitigate surface transportation problems in a cost-effective manner; and continued investment in ITS programs is warranted.

### ***Goals and Purposes (Section 5203)***

The five goals for the reauthorized ITS program include:

1. the enhancement of surface transportation efficiency and facilitation of intermodalism and international trade
2. achievement of national transportation safety goals;
3. protection and enhancement of the natural environment;
4. accommodation of the needs of all users of transportation systems, including commercial vehicles, passenger vehicles, motorcycles and those with disabilities; and
5. improvement of the Nation's ability to respond to emergencies and natural disasters.

The six purposes of the reauthorized ITS program include:

1. expedite deployment and integration of ITS;
2. ensure that transportation officials have adequate knowledge of ITS;
3. improve regional cooperation and operations planning;
4. promote innovative use of private resources;
5. develop a capable ITS workforce; and
6. complete deployment of CVISN in a majority of States by September 30, 2003.

### ***General Authorities and Requirements (Section 5204)***

This section establishes that:

- a. scope of the ITS program is to research, develop, operationally test and deploy ITS;
- b. policy is to not have federal funding for ITS deployment and operational tests displace public-private partnerships or private investment in such projects or tests;
- c. carry out program in cooperation with governmental, private and educational entities;



- d. consult with other federal officials (Commerce, Treasury, EPA, and others);
- e. provide technical assistance, training and information;
- f. support transportation planning activities;
- g. maintain an information clearinghouse
- h. use one or more advisory committees
- i. provide technical assistance and guidance in the procurement of ITS, including software procurement; and
- j. issue guidelines and requirements for evaluating operational tests and deployment projects, including to ensure the objectivity of the evaluators and the evaluation funding levels.

### ***National ITS Program Plan (Section 5205)***

The Secretary is required to maintain and update the National ITS Program Plan developed by US DOT and ITS America. The update must specify the goals, objectives and milestones for research and deployment; how specific programs and projects will achieve these goals, etc., in the next five to ten years; identify activities for the development of standards and protocols; and establish a cooperative process with State and local governments for "mainstreaming" ITS.

### ***National Architecture and Standards (Section 5206)***

Like its predecessor, TEA 21 continues the emphasis on the development of the national architecture and standards for ITS applications. Funding for this activity comes from the general research money. TEA 21 offers three general provisions: (1) US DOT is directed to "develop, implement and maintain" a national architecture and standards for ITS; (2) the national architecture shall promote ITS interoperability and efficiency; and (3) standards-setting organizations may be used as appropriate.

More significantly, however, TEA 21 requires additional actions by US DOT to identify critical standards and then ties federal funding for ITS projects to adherence to those standards. First, by June 1, 1999, US DOT is to submit a report to Congress that identifies and gives the status of standards that are "critical to ensuring national interoperability" or the development of other standards. Second, US DOT is empowered to establish "provisional" standards if, by January 1, 2001, any such critical standards are not adopted and published by the appropriate standards development organizations. On this latter point, US DOT must first assess whether the development of a critical standard or standards "jeopardizes the timely achievement" of the general goals of establishing a national architecture and standards for ITS. Upon such a finding, US DOT is required to establish a provisional standard or standards. US DOT can waive the provisional standards requirement under certain conditions.